

AMENDMENTS TO THE CLAIMS

Please amend the claims as indicated hereafter.

1. (Currently Amended) A universal mandrel system comprising:

a core mandrel having an outside diameter and at least one shaft on opposing sides of the core mandrel for a drive interface;

a plurality of adapter sleeves each having an inside diameter sized to engage the core mandrel outside diameter across an entire width of the adapter sleeves, the plurality of adapter sleeves comprising varying exterior dimensions and being interchangeably engageable with the core mandrel, wherein only one of the adapter sleeves engages the core mandrel at a time, the one adapter sleeve being selected to accommodate varying size part diameters; and

an interlocking mechanism formed on one of the core mandrel and the selected one of the adapter sleeve, the interlocking mechanism further secured between the core mandrel and the selected one of the adapter sleeves, the interlocking mechanism preventing the selected adapter sleeve from rotating relative to the core mandrel;

wherein at least one of the plurality of adapter sleeves is structurally configured to serve as an intermediate expansion rate medium to buffer a thermal mismatch between a composite component and an interfaced metallic component.

2. (Previously Presented) A universal mandrel system according to claim 1, wherein the interlocking mechanism comprises a lug formed on either the outside diameter of the core mandrel or the inside diameter of the adapter sleeve, and a slot formed in the other of the outside diameter of the core mandrel or the inside diameter of the adapter sleeve, the lug engaging the slot when the adapter sleeve is fitted to the core mandrel.

3. (Previously Presented) A universal mandrel system according to claim 2, wherein the lug is formed on the inside diameter of the adapter sleeve, and wherein the slot is formed in the outside diameter of the core mandrel.

4-5. (Canceled)

6. (Currently Amended) A universal mandrel system according to claim 1, wherein at least one of the plurality of adapter sleeves [sleeve] is structurally configured to serve as an interface connection with another metallic component.

7. (Canceled)

8. (Canceled)

9. (Currently Amended) A universal mandrel system according to claim 1, wherein at least one of the plurality of adapter sleeves [sleeve] is constructed of tool steel.

10. (Currently Amended) A universal mandrel system comprising:

a core mandrel having an outside diameter and at least one shaft on opposing sides of the core mandrel for a drive interface;

a plurality of adapter sleeves each having an inside diameter sized to engage the core mandrel outside diameter across an entire width of the adapter sleeves, the plurality of adapter sleeves comprising varying exterior dimensions and being interchangeably engageable with the core mandrel, wherein only one of the adapter sleeves engages the core mandrel at a time, the one adapter sleeve being selected to accommodate varying size part diameters; and

an interlocking mechanism formed on one of the core mandrel and the selected one of the adapter sleeve, the interlocking mechanism further secured between the core mandrel and the selected one of the adapter sleeves, the interlocking mechanism preventing the selected adapter sleeve from rotating relative to the core mandrel,

wherein a thermal expansion rate of the adapter sleeves is lower than that of the core mandrel to buffer a thermal mismatch between a composite component and an interfaced metallic component.

11. (Previously Presented) A universal mandrel system according to claim 10, wherein the interlocking mechanism comprises a lug formed on either the outside diameter of the core mandrel or the inside diameter of the adapter sleeve, and a slot formed in the other of the outside diameter of the core mandrel or the inside diameter of the adapter sleeve, the lug engaging the slot when the adapter sleeve is fitted to the core mandrel.

12. (Previously Presented) A universal mandrel system according to claim 11, wherein the lug is formed on the inside diameter of the adapter sleeve, and wherein the slot is formed in the outside diameter of the core mandrel.

13. (Previously Presented) A universal mandrel system according to claim 10, wherein the interlocking mechanism comprises a flange formed on one edge of the adapter sleeve, the flange having an opening therein, and a connector sized to fit in the opening and secure the flange to an axial face of the core mandrel.

14. (Previously Presented) A universal mandrel system according to claim 13, wherein the connector comprises a pin or a bolt.

15. (Previously Canceled)

16. (Currently Amended) A universal mandrel system according to claim 10, wherein at least one of the plurality of adapter sleeves [sleeve] is constructed of tool steel.